



K0536/8

5 December 2014

KATHU

PROVISION OF ELECTRICAL SERVICES: UITKOMS 463/1

ELECTRICAL SERVICES REPORT

1. Existing Capacity

There is currently only one 11kV cable that runs past the planned development, but this cable does not have the required capacity. It already supplies the two large commercial developments on stands 5116 & 5120 and the Khudunyane estate. Sufficient capacity is however available at Main Substation.

2. Development Under Consideration

The Uitikoms development will consist of 163 Res I high income stands and roughly 2,14 hectares designated for Res II housing - 64 dwelling units can be accommodated on this space. There is also 8 124 m² allocated to Institution Zone II which can accommodate churches. The exact size of the building is currently unknown.

Accepting the ADMD values as prescribed by Gamagara Municipality, the following loads are applicable in this development:

Type	Qty	ADMD	Load
Res I (High Income)	163	5 kVA	815 kVA
Res II	64	3 kVA	192 kVA
Institution Zone II (Churches)	1	50% surface at 30VA/m ²	121 kVA
TOTAL			1 128 kVA

The load of 1 128 kVA can be further diversified when ignoring the church stand due to its working hours. The load is then reduced to 1 007 kVA.

The developer currently indicates that 38 stands will be needed by 2017, with the rest assumed to follow after 2020. This timeline requires 190 kVA by 2017.

It is proposed that the developer install a new 11 kV cable ring from Main Substation to the proposed site and back. With no new developments scheduled for construction on this cable route, it only makes sense to complete the MV cable ring for redundant power supply from Main Substation.

The proposed cable route is indicated in the Annexures.

3. Standards & Regulations

3.1. The development will adhere to the latest applicable version of SANS 204 – Energy Efficiency in Buildings with Par 4.5.2 Hot Water Services as a specific example:

4.5.2.1 A minimum of 50% by volume of the annual average hot water heating requirement shall be provided by means other than electrical resistance heating, including, but not limited to, solar heating, heat pumps, heat recovery from other systems or processes.

3.2. The development will adhere to the latest applicable version of SANS 10142 Part 1 & 2.

4. Recommendation

4.1. Existing capacity on the 11 kV cable running past the development is not sufficient.

4.2. The developer provides the 11 kV cable, minisubs and low voltage reticulation to supply his development's stands including street lighting.

4.3. The 11 kV cable route to be confirmed and finalized with the municipality when the development is undertaken.

4.4. The municipality is to make recommendations on the availability and allocation of 11 kV switch gear in Main Substation.

4.5. That the developer adheres to the energy savings measures and regulations as noted under paragraph 3 above.

4.6. The provision of the above mentioned infrastructure to be in accordance with the requirements of the town's municipal electrical engineer.

4.7. The client needs to consult with the municipality on the Bulk Services Contribution for this development.

5. Validity & Limitations

This Electrical Services Report is only valid for as long as the existing electrical reticulation installation remains the same. Should other developments have an impact on the infrastructure or load on the electrical network, this report might have to be revised.

This report only addresses the capability of the infrastructure to support the development. It does not guarantee the allocation of available capacity in terms of supply to the development. This can only be approved and allocated by the municipality.

6. Annexures

Please refer to drawing K0536-01 Rev A detailing the proposed cable route.

Yours faithfully



HJ COETZEE PR. TECH. ENG.

